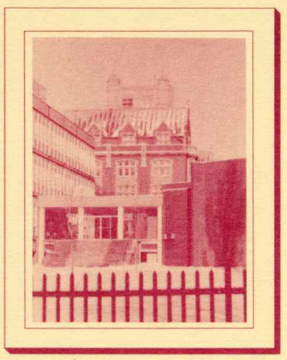
DIVISION OF GRADUATE STUDIES

M.Sc. IN BIOLOGY



ADMISSION REQUIREMENTS

The basic admission requirement is a B.Sc. Biology (honours or equivalent) or sufficiently high standing to indicate a potential for success in biological research.

Applicants are encouraged to visit or correspond with those faculty members in whose areas they are interested.

APPLICATION DEADLINE

Applications, including transcripts and reference letters, should be received by June 30. Later applications will be considered if there is still space in the program.

FINANCIAL ASSISTANCE

Assistance is available for qualified candidates on a competitive basis in the form of teaching assistantships paying from $2,500 to $7,000 per year which may be combined with scholarships, fellowships or research grant salary to provide a maximum annual income of $9,000. A number of university fellowships in the amount of $6,500 are also available. Qualified candidates should request and complete application forms for fellowships before February 1, and for assistantships prior to September 1. Qualified students are also encouraged to apply for Natural Sciences and Engineering Research Council fellowships and Québec resident students for FCAR: *Bourses d'études de perfectionnement et de recyclage*.

RESEARCH FACILITIES

The Department of Biology is equipped for research in six principal areas:

1. Animal Physiology
2. Aquatic Toxicology
3. Cell Biology
4. Ecology
5. Microbiology
6. Plant Physiology and Biochemistry

RESEARCH OPPORTUNITIES

ANIMAL PHYSIOLOGY

P.J. Albert, Insect sense organs, structure and function and electrophysiological studies.
N.N. Kapoor, Electron microscopic studies of cuticular and subcuticular structures of aquatic insects. Osmoregulation, respiration and sensilla in aquatic nymphs.
C. Hill, Patch-Clamp Studies of membrane currents and their role in single transduction in single liver cells; ion channels.

AQUATIC TOXICOLOGY

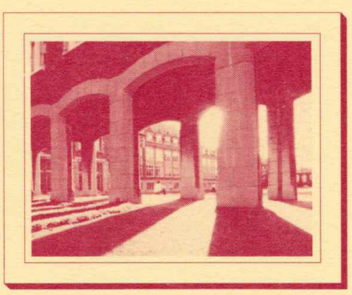
P.D. Anderson, Environmental toxicology with emphasis on aquatic organisms and multiple toxicity, developmental, physiological and biochemical adaptations in fish.
G. Leduc, Fish toxicology
S.M. Ruby, Laboratory studies in fish reproduction following chronic exposure to toxicants.

ECOLOGY

D. Fairbairn, Evolutionary ecology of semi-aquatic insects: adaptive significance of wing poly-morphisms, dispersal, gene flow, mating strategies, population structure, and behaviour.
L-A. Giraldeau, Behavioural ecology, sociobiology and ethology.
E. Maly, Zooplankton competition and predation and behaviour, invertebrate and algal population distribution and abundance.
J. D. McLaughlin, Ecology, biology, pathogenesis and systematics of waterfowl helminths, host-parasite responses of larval helminths and crustaceans.
P. Widden, Ecology of soil microfungi. Interactions between microfungi during the colonization and decomposition of natural and artificial substrates. Cellulose decomposition by *Trichoderma* species.

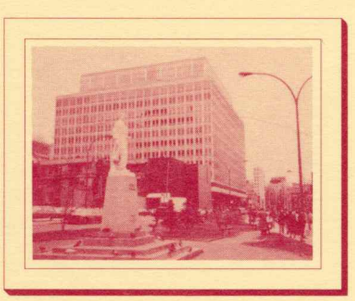
CELL BIOLOGY

A.M. English, Biological electron transfer mechanisms; structure-function relationships in heme proteins.
K.S. Dhindsa, Histochemistry, experimental biology, effect of drugs on cellular metabolism and histogenesis of organ systems.
H.E. Enesco, Studies of cell aging, control of lifespan, and testing the theories of aging.
R. Germinario, Investigations into the regulation of sugar metabolism, hormone responsiveness and cell proliferation in aging cultured human cells.
B. Hill, Membrane bioenergetics and transient state kinetic studies of cytochrome oxidase.
J.A. Kornblatt, Biochemical and biophysical studies on the mechanism of energy production of mitochondria.
M.J. Kornblatt, Biochemistry of lignin degradation; mechanism and subunits interactions of mammalian enolases.
R.M. Roy, Modification of physiological and genetic effects of ionizing radiation by tocopherol.
E. Wang, molecular biology, studies of cell aging.



MICROBIOLOGY / MOLECULAR BIOLOGY

C.G. Cupples, Mutagenesis and genome evolution. Genetic and biochemical studies of mutator strains.
F. Ergan, Immobilized enzymes in organic synthesis.
M.B. Herrington, Genetic and biochemical studies of the mechanism of nonsense and frameshift suppression by thymine-requiring strains of *E. Coli*.
E.B. Newman, Microbial metabolism, intermediary metabolism and its control in bacteria with particular reference to serine, glycine, C-1 and nitrogen metabolism, applications of microbiology to energy resource management and single cell protein; nitrogen fixation by photosynthetic bacteria.
R. Storms, Studies of cell-cycle-dependent gene expression in yeast as well as studies of the mechanisms responsible for accumulation of protein within the nucleus and for rapid protein inactivation.
D.Y. Thomas, Secretion and proteolytic processing of protein by yeast, genetic manipulation of yeast cells.



PLANT PHYSIOLOGY, BIOTECHNOLOGY AND BIOCHEMISTRY

S.S. Ashtakala, Physiological and biochemical effects of selected pesticides (herbicides and insecticides) in plants with particular reference to nitrogen metabolism. Their fate, behaviour and mode of action.
G.S. Espie, Photosynthesis, photorespiration, membrane transport CO_2 concentrating mechanisms, regulation of intracellular pH in cyanabacteria and higher plant cells.
R.K. Ibrahim, Isolation and identification of metabolites; purification, properties and subcellular localization of the enzymes involved in secondary metabolism.
B.S. Mangat, Nutritional, physiological and biochemical aspects of plant cell cultures and *in vitro* propogation of plants.

Concordia UNIVERSITY

INFORMATION

For further information and application forms, write to:

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